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Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

FEB 23 1993

FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

In the Matter of )  
Petition to Authorize )  
Co-Primary Sharing of the )  
450 MHz Air-Ground )  
Radiotelephone Service )  
with BETRS )

RM-8159

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**REPLY COMMENTS OF  
THE UNITED STATE TELEPHONE ASSOCIATION,  
NATIONAL TELEPHONE COOPERATIVE ASSOCIATION,  
ORGANIZATION FOR THE PROTECTION AND ADVANCEMENT OF  
SMALL TELEPHONE COMPANIES,  
NATIONAL RURAL TELECOM ASSOCIATION,  
AND THE RURAL ELECTRIFICATION ADMINISTRATION**

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## SUMMARY

In the BETRS Report and Order adopted in 1988, the Commission had authorized co-primary access for BETRS in the 150 and 450 MHz bands with Public Land Mobile Services. It also authorized co-primary access for BETRS to 50 channels in the 800 MHz band. Because of Commission restrictions placed on the 800 MHz band and the congestions within the 150 MHz band, these two bands are effectively unusable for BETRS. Moreover, since 1988, BETRS have grown substantially and spectrum shortage within the 450 MHz band is real and imminent.

By contrast, the air-to-ground service (ATG) presently occupying the 12 frequencies adjacent to BETRS in the 450 MHz band shows no evidence of demand and growth. Given the intrinsic public interest value of BETRS, all or most of the 12 ATG frequencies should be reallocated to BETRS on an exclusive primary basis. This does not mean that ATG will now be without any spectrum use. It can still access the 800 MHz using a pool arrangement with other aircraft licensees. In addition, the Commission might consider reassignment to ATG for its exclusive use some of the channels in the 800 MHz presently allocated to BETRS but which are not capable of efficient utilization by BETRS. Another alternative would be to allow BETRS to access a portion of the channels in the 450 MHz band presently assigned to ATG on an exclusive primary basis, but with the understanding that the remaining channels will be transitioned over time for exclusive use by BETRS.

In evaluating these options, the Commission should bear in mind the relative public interest value of BETRS and ATG services. The ATG service provides communications to a small, select group of business aviation users. In contrast, as an extension of the local loop, BETRS is a growing service, providing less costly basic telephone service to rural subscribers.

Petitioners respectfully request the Commission to commence an expeditious rulemaking to examine the issues raised in this petition.

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NATIONAL RURAL TELECOM ASSOCIATION,  
AND THE RURAL ELECTRIFICATION ADMINISTRATION**

The United States Telephone Association (USTA), National Telephone Cooperative Association (NTCA), Organization for the Protection and Advancement of Small Telephone Companies (OPASTCO), National Rural Telecom Association (NRTA) and the Rural Electrification Administration (REA) (Petitioners) respectfully submit these reply comments on the issues raised by the parties in the above-captioned petition for rulemaking.

**I. BACKGROUND**

On November 9, 1992, Petitioners filed a joint petition requesting the Commission to authorize use of the older air-to-ground (ATG) service channels for Basic Exchange Telecommunications Radio Service (BETRS). The 12 frequencies in question are contiguous to the current 26 frequencies in the 450 MHz band that BETRS shares with Public Land Mobile Services. Co-primary sharing with ATG will permit BETRS licensees to expand

their existing radio-based technology and deliver much needed new telephone services to rural customers.

Sixteen parties filed comments supporting the rulemaking petition<sup>1</sup> while only two parties filed oppositions.<sup>2</sup> As noted in the supporting comments, since authorized by the Commission in 1988, BETRS has proven to be a cost-effective method of providing basic local exchange services to rural customers. Access with ATG would enable BETRS to be used by exchange carriers to expand their services to customers and promote the Commission's universal service goals. The overwhelming majority of commenters urge the Commission to grant the petition and to commence an expeditious rulemaking proceeding to evaluate the request for spectrum sharing.

The opposing parties raised issues concerning customer demand for BETRS, the need for further spectrum allocation, and possible frequency interference if co-primary status is granted. Below, Petitioners address these arguments.

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<sup>1</sup> See supporting comments of Alcatel Network Systems, Inc., The California-Oregon Telephone Co., Carlson Communications, Inc., Century Telephone of Arkansas, Inc., City of Ketchikan, Alaska, Fairbanks Municipal Utilities System Telephone Company, Haviland Telephone Company, Interdigital Communications Corp., Milford Engineering, Nicholville Telephone Company, The Ponderosa Telephone Co., The Ronan Telephone Company, The San Marcos Telephone Company, Inc., Southwestern Bell Telephone Company, The Universal Service Telephone Corporation, United Utilities, Inc.

<sup>2</sup> See opposing comments of Mobile Telecommunication Technologies Corp. (Mtel) and The National Business Aircraft Association (NBAA).

## II. DISCUSSION

### A. The Commission Should Allocate Additional Spectrum to BETRS to Augment its Current Allocation in the 450 MHz Band.

In the BETRS Report and Order, the Commission had authorized co-primary access for BETRS in the 150 and 450 MHz bands with Public Land Mobile Service. It also authorized co-primary access to 50 channels in the 800 MHz band.<sup>3</sup> Experience since 1988 has shown that due to Commission restrictions placed on the 800 MHz frequencies<sup>4</sup> and the high occupancy rate at 150 MHz in rural areas, these two bands are effectively unusable for BETRS. Today, the 26 shared frequencies in the 450 MHz band remain the most viable frequencies for BETRS. Within this band, however, increased public and land mobile use continue to limit BETRS' growth and expansion because of its co-primary status.<sup>5</sup>

Mtel questions Petitioner's showing of growth and the need for more frequencies. It alleges that the list of examples of BETRS facilities not constructed due to a lack of frequencies in Appendix B to the rulemaking petition is inadequate and could not be construed as showing a lack of available channels.<sup>6</sup> While it is true that Petitioners did not commission a costly "need" study

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<sup>3</sup> See Report and Order, CC Dkt. No. 86-495, 3 FCC Rcd 214 (1988) (BETRS Report and Order); Memorandum Opinion and Order on Reconsideration, 4 FCC Rcd 5017 (1989) (Reconsideration Order).

<sup>4</sup> The Commission restricts use of the 800 MHz frequencies within 100 miles of the top 50 MSAs. Id.

<sup>5</sup> See Petition for Rulemaking at 5-6.

<sup>6</sup> See Mtel at 4-5.

to accompany their rulemaking petition,<sup>7</sup> the list of examples in Appendix B is accurate and well-supported by a substantial number of parties. The Commission's own licensing records indicate that since BETRS was established in 1988, there has been strong growth and demand for the service, a demand that is still unabated.<sup>8</sup>

Three commenters, Alcatel, Interdigital and Southwestern Bell Telephone, provided the Commission with concrete examples of BETRS growth and the urgent need for additional spectrum allocation. Alcatel, a manufacturer of network systems, indicates that prior to entering the BETRS market, it had considered developing equipment for the 150 and 800 MHz bands. Its internal study demonstrated, however, that the then-existing congestion in the 150 MHz band and the constraints placed on use of the 800 MHz frequencies would limit markets to the point where Alcatel could

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<sup>7</sup> If the Commission deems it necessary, Petitioners are perfectly willing to submit a formal "needs" or demand study during the rulemaking phase of this proceeding.

<sup>8</sup> According to information available to Petitioner USTA, delivery of BETRS equipment to serve customers' access lines in the United States nearly doubled between the period 1988-1989 and 1989-1990. However, from 1990-1992, delivery of BETRS equipment to serve additional access lines was constrained due to spectrum shortage. The following display illustrates the initial growth and subsequent stagnation in the growth of BETRS access lines: 1988 (350 access lines); 1989 (727 access lines); 1990 (1,440 access lines); 1991 (2,032 access lines); 1992 (1,018 access lines).

The actual number of BETRS access lines serving subscribers in the U.S. from 1988 to 1992 totals 5,566. Based on the earlier historical trend, USTA believes that over 11,000 access lines would have been served by BETRS by the end of 1992 if sufficient spectrum were available for use by BETRS.



not justify developing BETRS equipment using those two bands.<sup>9</sup> The current 450 MHz BETRS frequencies shared by BETRS and Public Land Mobile Services are inadequate to meet the growth and demand for BETRS. To facilitate deployment of BETRS, Alcatel has made every effort to engineer around the existing mobile systems. Alcatel concludes that there remains inadequate usable spectrum available for BETRS.<sup>10</sup>

Interdigital, a BETRS equipment supplier, also supports the need for more contiguous spectrum for BETRS. It further points out that the Commission's licensing of paging systems in rural areas on the 450 MHz co-primary spectrum is a major factor in the current spectrum shortage. Given the large number of paging channels made available to the paging industry, local exchange carriers are often unable to deploy much needed new BETRS services to its customers.<sup>11</sup>

A Tier 1 local exchange carrier, SWBT, comments that it currently uses BETRS to allow rural customers to convert their multi-party telephone service to single-party line service without the need to install additional cable. However, it too notes that the present spectrum assignment for BETRS is limited and the frequencies are congested. Thus, there is less opportunity for SWBT to rely on BETRS to meet additional

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<sup>9</sup> See Alcatel at 2-7 and n.4.

<sup>10</sup> Id. at 8. To this end, Alcatel argues for authorization of use on the 450 MHz band on an exclusive primary basis.

<sup>11</sup> See Interdigital at 5.

telecommunications need in rural areas.<sup>12</sup>

Petitioners have learned that another Tier 1 local exchange carrier, U S WEST Communications, Inc., (USWC) is experiencing similar spectrum shortage difficulties in their service areas. USWC uses BETRS to convert rural customers from multi-party line services to single line service. Several state public utilities commissions within USWC's 14-state operating territory mandate single line service for rural subscribers, and USWC has a legal obligation to comply. In addition, USWC uses BETRS as a cost-effective means to eliminate replacing deteriorated cables in some rural areas.

USWC is presently attempting to develop BETRS in different sections of Colorado, but found congestion in the 450 MHz band. USWC has made every effort to engineer around the existing mobile, paging and other systems but concluded that its service quality would suffer as a result of insufficient spectrum available for BETRS deployment.

The above facts amply support the conclusion that spectrum shortage for BETRS is real. By contrast, no evidence of additional demand for the old ATG service was proffered by the two opposing parties. NBAA made a cursory claim that "the future prospects of ATG are positive" and "we forecast the use of these to be robust, not moribund as the petitioners would suggest."<sup>13</sup> Absent further proof, NBAA's claim of continued prosperity for

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<sup>12</sup>     See SWBT at 2-3.

<sup>13</sup>     See NBAA at 2-3.

ATG service should not be accepted. Indeed, the Commission's own licensing record shows a continued decline in demand for ATG and that many ATG systems using the 450 MHz band have been discontinued.<sup>14</sup>

Certainly, there are significant differences in the use of the two services. It is important to note that while NBAA claims 13,000 private aircraft users, new or improved basic service can be brought to approximately a million customers by BETRS, providing larger and more consistent public interest benefits.

**B. To Meet Customers' Demand, BETRS Should Be Allocated Exclusive Primary Status in the 12 Contiguous Frequencies within the 450 MHz Band.**

In the petition for rulemaking, Petitioners had requested co-primary sharing with ATG on the 12 contiguous frequencies within the 450 MHz band. This proposal was met with stiff opposition from NBAA. It claims that its members are unable to share the 450 MHz band with BETRS due to equipment usage. According to NBAA, the 800 MHz band equipment is geared toward commercial airliners while NBAA members with smaller private aircraft are better served by the 450 MHz transceivers.<sup>15</sup> NBAA's argument is misplaced. First, in addition to the 12 frequencies allocated to them in the 450 MHz, NBAA's members already have full and exclusive rights to use 4 frequencies in

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<sup>14</sup> See Reply Comments of Interdigital at 5-6.

<sup>15</sup> See NBAA at 2-5.

the 800 Mhz band by participating in a pool arrangement with other licensees. On April 12, 1990, the Commission adopted a Report and Order in Gen. Docket No. 88-96 establishing an air-ground radiotelephone service. NBAA members are eligible for these licenses as well. The Commission adopted an open entry licensing policy that facilitated the entry of new air-ground service providers. The Commission provided for sharing of the air-ground frequencies by specifying that all such air-ground licensees would be allowed equal access to the communications channels. Each licensee would be assigned an exclusive control channel. Additional control channels, if more than four licenses were granted, would be created from the communications channels adjacent to the control channels in each channel block.<sup>16</sup> Thus, under this plan, both commercial and NBAA's private aircraft licensees have exclusive operating rights to a full 4 MHz of frequencies in the 800 MHz band.

Second, equipment cost and weight, while important considerations, should not be dispositive of whether non-commercial airline ATG service could use the 800 MHz band. Presumably, as technology evolves, the size, weight and cost of ATG equipment should decline, making it more suitable and economical for business aircraft users. NBAA has not provided any reason why its members could not take advantage of the more

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<sup>16</sup> See Memorandum Opinion and Order, Gen. Dkt. No. 88-096, 5 FCC Rcd 3861 (1990); Memorandum Opinion and Order on Reconsideration, 6 FCC Rcd 4582 (1991).

modern equipment if it is available in the marketplace.<sup>17</sup>

Indeed, Alcatel comments that in certain markets, the 450 MHz ATG systems are already being abandoned in favor of the more modern 800 MHz systems.<sup>18</sup> In any event, NBAA's argument of detrimental reliance on existing ATG equipment tailor-made for 450 MHz is insufficient to overcome its objections to spectrum-sharing.

Having had the opportunity to review the filed comments and the proposals made by the commenters in this proceeding, Petitioners have come to realize that sharing the spectrum with ATG may not have been the optimal solution.<sup>19</sup> Petitioners now

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<sup>17</sup> NBAA claims that its members and other operators of private aircraft presently have installed on airplanes and helicopters approximately 13,000 radio telephone units. These radio telephones are linked to approximately 83 domestic ground stations and 20 in Canada. NBAA at 2 and 7. Assuming that NBAA implies by this statement that the ATG service is intercontinental in nature, it is unclear to Petitioners whether these 13,000 radio units are still in full service and operation. It is likely that many of these units are not utilized or obsolete. Moreover, the number merely represents the units sold, and not the number of units still in operation. By contrast, the full use and geographical coverage of BETRS is demonstrated by the number of access lines in each exchange carrier's traffic study.

<sup>18</sup> See Alcatel at 10.

<sup>19</sup> For instance, NBAA claims possible frequency interference between ATG and BETRS. A business aircraft flying at an altitude of 41,000 to 50,000 feet will be impaired by BETRS stations operating within overlapping service areas. See NBAA at 6 and n.4. Mtel claims that even if adequate separation of 640 miles is maintained between ATG base stations and BETRS facilities, the likely result of co-primary licensing of the two services in the 450 MHz band is destructive interference to BETRS and its own services. See Mtel at 7. While Petitioners do not concede that the magnitude of frequency interference as described by Mtel is an eventuality, the possibility does exist, (continued...)

believe that BETRS should be allocated exclusive primary status to the 12 frequencies in the 450 MHz band. Petitioners agree with Alcatel and a majority of the commenters that inadequate spectrum is stifling provision of BETRS, and that limitation results from co-primary status. Hence, more drastic action by the Commission is warranted. Alcatel asserts that reallocation of the 450 MHz ATG spectrum to BETRS on an exclusive primary basis is crucial to provide the only unencumbered relief that is real and long-lasting. It will provide much-needed spectrum to expand existing systems and will enable equipment manufacturers to develop a new generation of BETRS equipment, with full knowledge that no spectrum shortage will likely occur which will impair their research and development efforts. This will move the Commission a long way towards fulfilling its commitment to support the development of BETRS for rural customers.<sup>20</sup>

Given the intrinsic public interest value of BETRS, Petitioners respectfully request the Commission to consider reallocating all or most of the 12 ATG frequencies to BETRS on an exclusive primary basis. This does not mean that ATG will now be without any spectrum use. As stated before, it can still access

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<sup>19</sup>(...continued)

making spectrum sharing a less-than-ideal solution to the shortage problem. This does not mean, however, that BETRS should be allowed to wither. Rather, it means that other options, such as channel realignment, may be called for. Frequency coordination remains an important issue and should be further explored by the Commission and the parties.

<sup>20</sup> See Alcatel at 8-10.

the 800 MHz using a pool arrangement with other aircraft licensees. In addition, the Commission might consider re-assigning to ATG for its exclusive use some of the channels in the 800 MHz presently allocated to BETRS but which are not capable of efficient utilization by BETRS. Those channels may be more suitable for ATG than for BETRS.

Another alternative would be to allow BETRS to access a portion of the channels in the 450 MHz band presently assigned to ATG that are adjacent to the current BETRS allocated channels on an exclusive primary basis, leaving the remaining channels for ATG, but with the understanding that these channels will be transitioned over time for exclusive use by BETRS. Of course, ATG users would continue to have access to the other 800 Mhz channels.

Petitioners believe these alternatives to be viable and represent a fair arrangement between BETRS and ATG. Petitioners urge the Commission to commence an expeditious rulemaking proceeding to explore these options.

**C. Miscellaneous Issues.**

In a proceeding to revise Part 22 of the Commission's rules, CC Docket 92-115, the Commission has tentatively decided to apply to BETRS the P.25 grade of service applicable to public land mobile services.<sup>21</sup> Petitioners submit that this new service ruling, if adopted, will be disastrous for BETRS. Local exchange carriers engineer their BETRS installations using a P.01 grade of

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<sup>21</sup> See InterDigital at 5-6, Alcatel at 4.

service which limits signal blockage to less than one percent of all attempted calls. Anything less than P.01 would mean service degradation for BETRS' subscribers -- a development which will not be acceptable to the exchange carriers nor to the state public utilities commissions who regulate them. Petitioners respectfully request the Commission to maintain the P.01 grade of service for BETRS, as it has done since 1988. Because of the significance of this issue in the Commission's Part 22 rewrite, copies of this reply are being filed in that docketed proceeding as a written ex parte contact. Petitioners understand that CC Docket 92-115 may be the proper proceeding in which this issue would be resolved.

Petitioners believe that to maximize efficient use of the spectrum resource, applications for BETRS spectrum optimally should be made under Part 21 of the Commission's rules rather than under Part 22 as is presently the case. 47 C.F.R. §§ 21 and 22. Part 21 defines rules for point-to-point radio service which is more in line with BETRS functionality. Part 22, on the other hand, prescribes technical rules and parameters principally for use by public land mobile services.<sup>22</sup> Hence, the Commission should consider regulating BETRS under Part 21.

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<sup>22</sup> 47 C.F.R. § 22 provides, in pertinent part, that "The purpose of the rules in this part is to prescribe the conditions under which portions of the spectrum are made available for domestic common carrier radio communications which utilize transmitters on land or in specified offshore coastal areas within the continental shelf, and certain other situations as authorized under this part." Id. at Sec. 22(b).



### III. CONCLUSION.

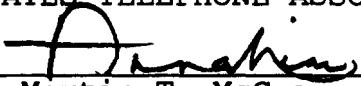
In evaluating this request, the Commission should bear in mind the relative public interest value of the two services under consideration. The ATG service provides communications service to a small, select group of business aviation users. In contrast, as an extension of the local loop, BETRS is a growing service, providing less costly basic telephone services to rural subscribers. In purely marketing terms, ATG is a service that caters to a well-defined, niche market while BETRS caters to a diverse populace living in rural America. The relative value and benefits of these two services are readily apparent. From a public policy perspective, the Commission should clearly find for BETRS. To do otherwise would undermine the Commission's universal services mandate.<sup>23</sup>

Accordingly, Petitioners respectfully request the Commission to commence an expeditious rulemaking to examine the issues raised in this petition.

Respectfully submitted,

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<sup>23</sup> 47 U.S.C. § 157(a).

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CERTIFICATE OF SERVICE

I, Denise G. Giles, hereby certify that the foregoing Reply Comments of Petitioners in RM-8159, have been served by first class mail on this 23rd day of February, 1993 to the Parties of Record.

A handwritten signature in cursive script, reading "Denise G. Giles", is written over a horizontal line.

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